HEAT-RETAINING FEATHER WADDING

FIELD OF THE INVENTION

The present invention relates to a kind of down-feather wadding with an excellent heat-retaining property. Particularly, the present invention relates to kind of heat-retaining feather wadding.

BACKGROUND OF THE INVENTION

The feathers here refer to those in which many barbs are grown on quills in rows and tiny barbs are further grown on the barbs in row. The downs refer to those in which yarn-like barbs are grown on tips of quills (attached to the skin of fowl through bases).

Down and feather as good natural heat-retaining material are widely used in feather-wear, quilt, comforter and the like. However, because of their natural physical structures, such as downs have cloud shape and barbs are grown on quills in rows, that lead down and feather products to be very unstable, fuzzy, and bulky. In addition, processes for producing down and feather products become very complex and inefficient. As a result, resources not only natural (raw and processed materials) but also human (labor productivity) are wasted. Furthermore, feather has a flat shape with an inflexible shaft located in its middle; barbs are grown on the shaft with 50-micron separation. Only the very soft part of the feather can be used for making feather wadding in the traditional feather product industries. The most part of the feather are abandoned due to hardness of shafts. Thereby, resource waste is serious.

SUMMARY OF THE INVENTION

The purpose of the present invention is to provide a novel tailorable material named heat-retaining feather wadding. Another purpose of the present invention is to overcome the disadvantages of the traditional down and feather wadding. These disadvantages involve productivity inefficiency, unstableness, unevenness, fuzziness and bulky for down and feather products. More important, the present invention provides a way to use the part of big feather that has big barbs and hard shaft. The big feather is a big part of the feather, which is considered as an abandon material in the traditional feather industry. Therefore, the present invention solves the serious resources waste problem.

The above-mentioned objects are achieved by:

A heat-retaining feather wedding comprises feathers having a web piece structure, the feathers intersect and connect each other, and joints of the intersections and connections are bonded together by adhesives.

A heat-retaining feather wedding comprises feathers and textile fibers, the feathers are bonded together by the entanglement of textile fibers.

A heat-retaining feather wedding comprises feathers and chemical textile fibers with lower thermal melting point, the feathers are bonded together by the adherence of chemical textile fibers with lower thermal melting point.

Feathers make use of single feathers that are made from processing down-feathers of waterfowl such as geese, ducks and the like. In addition feathers make use of defective feathers come from the processes for handling downs. As well, feathers make use of the mixture of the single feathers and defective feathers.

Adhesive makes use of the natural resin or polyurethane or polypropylene acid ester or poly-acetate ethyl ester or poly-chlorin ethene or propylene acid emulsion.

Textile fibers make use of the nature textile fibers or synthetic textile fibers and chemical textile fibers. The textile fibers selects at least one of fibers that come from cotton, flax, fur, silk, terylene, nylon, acrylic, spandex, polyvinyl chloride, adhesive chemical fiber, PE/EPC bi-fibers, ES synthetic fiber, and Polypropylene fiber with low melting point.

Chemical textile fibers with low melting point make use of Alkali polyester fiber (PEP), mixture of polypropylene fiber with polyethylene fiber (PP & PE), polypropylene fiber (PP). The low melting point is in a rang of 110°C to 140°C.

The present invention possesses following advantages: (1) With a flat and even web structure, the heat-retaining feather wadding is easily tailorable and non-fuzzy. Furthermore, the products made by the heat-retaining feather wadding can greatly save time and resource because of its simple and efficient manufacture processes. (2) Since barbs contain many super-tiny barbs. These tiny barbs contain nodes and/or thorns that form more small spaces so as to more static air can be well maintained. As a consequence, this heat-retaining feather wadding provides a unique property for better heat retaining, and appears pretty and decent, not bulky. (3) Even more, the combination of feather and textile fiber provides the best way to embody the unique properties of fibers, including tightness, good capability of moisture absorption and saturation as well. (4) By using big feathers and defective feathers, the present invention possesses the great ability to use resources more efficiently.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is an explanation of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Although the following detailed description contains many specifics for the purposed of illustration, any one of ordinary skill in the art will appreciate that many

variations and alterations to the following details are within the scope of the invention. Accordingly, the following preferred embodiment of the invention is set forth without any loss of generality to, and without imposing limitations upon, the claimed invention.

Referring Figure 1, feathers 1 make use of a kind of single feather come from washed-ducks, goose feathers and downs after getting rid of quills. Through process of non-weaving textiles technology to form the feathers as a web piece structure by intercrossing and interlinking the barbs 2, tiny barbs 4, hooks 3 of feathers together. The crossing and linking points are bonded together by adhesive 5.

It is another embodiment of the present invention. Textile fibers 6 are added into feathers. The feathers and textile fibers 6 are formed as a web piece structure by intercrossing and entangling the barbs 2, tiny barbs 4, and hooks 3 of feathers together by the entanglement of textile fibers 6.

It is another embodiment of the present invention. Chemical textile fibers with low melting point (7) are added into feathers. The feathers and chemical textile fibers are formed as a web piece structure by intercrossing and interlinking the barbs 1, tiny barbs 4, and hooks 3 together with chemical textile fibers having low melting point 7. The crossing and linking points are bonded together by the adherence of chemical textile fibers having low melting point.

For above-mentioned embodiments, adhesives can be natural resin, polyurethane, polypropylene acid ester, poly-acetate ethyl ester, poly-chlorin ethane, propylene acid emulsion. Textile fibers can be cotton, flax, fur, silk, terylene, nylon, acrylic, spandex, polyvinyl chloride, adhesive chemical fiber, PE/EPC bi-fibers, ES synthetic fiber, and Polypropylene fiber with low melting point. Chemical textile fibers with low melting point can be Alkali polyester fiber (PEP), mixture of polypropylene fiber with polyethylene fiber (PP & PE), and polypropylene fiber (PP).